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Subject News: Desalination plant, EP water conservation lauded, El Paso Times, 01/08/07



## **Desalination plant, EP water conservation lauded**

El Paso Times, 01/08/07

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By Chris Roberts / El Paso Times

Even as a project that will convert millions of gallons of salty water stored in underground rock formations into drinking water nears completion, city officials say the city has achieved new milestones in water conservation.

With wells drilled, pumps installed and buildings erected, El Paso's desalination plant, which city officials say will provide adequate supplies of drinking water for decades, is about 70 percent complete and on schedule for a summer start.

"We're in good shape," said Ed Archuleta, El Paso Water Utilities general manager, adding that the planned completion date is June 8. "Everything right now is within budget and on time."

Nonetheless, conservation -- the cheapest way to protect the water supply -- will remain a core part of the utility's long-term strategy, Archuleta said.

"We had a target in 2000 of 140 (gallons per capita per day) by the end of the decade," Archuleta said, "we met that. ... We've grown by 194,000 people since 1986 and we're using the same amount of water we were using in 1986 or 1987."

He said there still is room for more conservation, which mainly would be driven by raising rates, targeting consumers who use the most water. Another way to achieve lower water-use rates is to ensure that new construction uses refrigerated air instead of evaporative cooling, he said, and continuing the use of reclaimed water for the grass in parks, sports fields and golf courses.

"Before you look at importing water, there's still more to conserve," Archuleta said. "When people ask me why we should still have these restrictions when we're going to have more water I tell them that we don't have restrictions -- we have best-management practices."

However, without the desalination plant and the long-term water security it represents, El Paso officials have said it is unlikely the Army would have decided to relocate a full division of soldiers and their families to Fort Bliss.

All the plant's major components are in place, said desalination facility Superintendent Art Ruiz.

Workers are installing electrical wiring and soon will be working on putting in drywall, carpeting, instrumentation and furniture, he said. The reverse osmosis membranes, which filter out salt and other minerals in brackish water, are relatively fragile and will be installed last, Ruiz said.

"The challenge is to make this thing work, to make it work efficiently and to incorporate it into the rest of the utility's systems," he said.

The plant will tap deeper into a vast underground aquifer called the Hueco Bolson that holds about 25 million acre feet of brackish water that must be treated to be drinkable.

The aquifer runs along the east flank of the Franklin Mountains and the Texas-Mexico border from southern Hudspeth County past Las Cruces, covering a surface area of about 1.6 million acres and extending some 8,000 feet below ground level. It holds water that ranges from fresh to more than 10,000 years old, said William R. Hutchison, the utility's water resources manager, with the oldest water on the outer fringes and in the deepest reaches.

"Generally, the saltier it is, the older it is," Hutchison said, adding that the water the city will treat is "relatively young."

The \$95 million project -- which includes the plant, wells to supply water, a technology/education center and injection wells to dispose of the salty concentrate left behind -- will cost about \$4.8 million a year to operate. But when the valves are opened in summer, it won't be full blast.

It will be brought on line slowly to test the water tightness of connections, flush lines, disinfect them, and make sure all the automated parts of the plant are working correctly, Ruiz said. Most of the equipment has a one-year warranty, Archuleta said, and it is expected to take six months or more to "get all the bugs out."

But he said there should be no major surprises. "It's not like a new piece of equipment that's never been tried before," he said. "By the next summer (2008) we'll be in higher production. It will ensure the (city's) water supply for us and the growth on the East Side."

In full production, the plant would increase the city's water supply by about 25 percent of the current demand, Archuleta said. It can produce about 27 million gallons per day of drinking water. It still isn't clear how much Fort Bliss will use and how much will be required to supply the city and county needs, he said.

The desalination plant could end up providing the example for "a long-term water strategy in the United States," Archuleta said.

He said the biggest challenge will be disposal of the concentrate. Most desalination plants are located next to oceans or seas where the salty concentrate can be sent back into a large body of water.

In the middle of a desert, the city had to find other options.

The utility decided the best option was to pipe the concentrate about 22 miles northeast near the New Mexico border and inject it into wells drilled for that purpose. The underground water in that area has a higher concentration of dissolved solids than the effluent from the desalination plant, utility officials have said.

The faster the concentrate seeps away from the bore holes through cracks in the rock formations the better, Hutchison said. And the longer the mineral solids stay suspended in the water, the slower the wells will clog and lose their usefulness, he added.

"Everything is looking as good as we expected," Hutchison said.

Although the injection wells are conservatively expected to last 20 years, Hutchison said it's not clear exactly how long they will continue to function in the long term. Because El Paso isn't the only population center setting up or planning inland desalination systems, Archuleta said it is likely there will be technological advances that could provide new options.

Some of those could be developed at the El Paso plant's technology center, which will conduct research in cooperation with universities and private companies, Archuleta said. It is even possible, although not practical at present, that salt and other minerals could be extracted from the concentrate and sold commercially.

"It's (the desalination plant) our future for our kids and for their kids' kids," Ruiz said.

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